Section 1-2

Stemplots and Dotplots

Warm-up

Take a book that you have with you and open to any page and begin counting the number of words in each of the first 25 sentences on that page.

1. Make a frequency table of the data you have collected.
2. Determine the maximum number of words in your sample.
3. In this situation, what is the population?
4. Do you think your sample is representative of the population? Why or why not?

You just completed a survey of the sentences in your book. Now, each of you has data that you collected on the book, and you created a frequency table to represent the information. This is one way to look at the distribution of the data.

Distribution: A visual way to represent data for easy comparison

Stem-and-leaf plot (stemplot):
A graphical representation of data in a table, where the leaf is the last digit, and the stem is the digits that are remaining; there is a vertical line separating the stem and leaf

Maximum: Largest value in the data set

Minimum: Smallest value in the data set

Range: Shows which values fall in the data set; Maximum minus minimum

Cluster: A grouping of data points

Gap: When a space exists between data points

Example 1

Collect the data on the number of pets students in this class have.

a. Identify the minimum and maximum number of pets.

b. Are there any clusters or gaps in the data? Why or why not?

Outliers: Data points that are very different than the rest of the points in the data set

Back-to-back stemplot: Placing leaves on both sides of the stems when related data is being compared

Example 2

The ages of the Wimbledon tennis champions in the men's and women's singles from 1970-1990 are shown below. Create a back-to-back stemplot for the data and answer the questions. Set up the intervals so they are collected in five-year intervals.

Men: 18 21 26 22 31 22 24 29 22 24 23 17 22 27 21 20 21 25 25 27 24

Women: 33 28 19 21 27 21 22 20 19 28 29 28 31 26 19 25 26 27 29 31 30

We should probably put these in order for men and women...

USING OUR CALCULATORS!!!

Men: 17 18 20 21 21 21 22 22 22 22 23 24 24 24 25 25 26 27 27 29 31

Women: 19 19 19 20 21 21 22 25 26 26 27 27 28 28 28 29 29 30 31 31 33

Men		Women
	1	
7 8	•	9 9 9
0 1 1 1 2 2 2 2 3 4 4 4	2	0 1 1 2
5 5 6 7 7 9	•	5 6 6 7 7 8 8 8 9 9
1	3	0 1 1 3
	•	
	4	

a. Find the range of the ages for the men and for the women.

Men: 31 - 17 = 14 years

Women: 33 - 19 = 14 years

b. How many women were from 25 to 29 years old when they won the championship?

Ten women were from 25 to 29 years old when they won Wimbledon.

c. How old is the youngest person to win Wimbledon during the given time period? The oldest?

The youngest person was 17 years old, and the oldest was 33 years old.

d. Are there any outliers? If so, what age(s)?

Not in this case!

Frequency: A really cool video game

Scratch that...that's not right...

Frequency: How often an event occurs

Dotplot of Dot-frequency diagram:

Another way to distribute data; Each data point is represented as a dot

Example 3

Collect data on the number of siblings of students in this class and represent it in a dotplot.

a. How many students are in the class?

b. How many students are an only child?

c. How many students have only one sibling?

d. How many students have four or more siblings?

Homework

p. 16 #3-23